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81-10109
CR-164103

FIRST QUARTERLY REPORT
FOR
MAGSAT SCIENCE INVESTIGATIONS

Contract NAS 5-26328

For the period
9/9/80 - 11/30/80

submitted to

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
Greenbelt, Maryland 20771

by

BUSINESS AND TECHNOLOGICAL SYSTEMS, INC.
Aerospace Building, Suite 440
10210 Greenbelt Road
Seabrook, Maryland 20801

RECEIVED

JAN 9, 1981

SIS/902.6

M-021

TYPE II

(E81-10109) MAGSAT SCIENCE INVESTIGATIONS
Quarterly Report, 9 Sep. - 30 Nov. 1980
(Business and Technological Systems, Inc.)
4 p HC A02/MF A01

CSCD 05B

N81-22445

Unclass

G3/43 00109

1.0 WORK ACCOMPLISHED DURING REPORT PERIOD

This initial period has in part been devoted to modifications of existing software for inversion of magnetic anomaly data to equivalent-layer magnetization models, while we await usable quantities of Magsat data over the U.S. This software will take any combination of component or scalar data in profile form and invert it to a discrete-source magnetization distribution for sources having arbitrary equal-area spacing and with the option of constraining both source direction and source magnitude.

Additionally, software for spectral depth-to-magnetic bottom estimates is under development. The software will be thoroughly tested on synthetic data, and applied to 1) the NOO survey data (we are adapting the altitude-corrected version generated by J. C. Cain for our use, and 2) NURE data for the southern Rio Grande Rift (we are in the process of obtaining this from Oak Ridge).

Finally, we have digitized Swanberg's silica geotemperature data for the U.S. for our heat flow studies.

2.0 WORK PLANNED FOR NEXT REPORTING PERIOD

During the next quarter we plan to:

- 1) test the magnetization model software using real data
- 2) test the spectral analysis software
- 3) continue to obtain relevant supporting data
- 4) grid the silica data registered to an existing magnetization grid for the U.S. for correlative studies.

3.0 FISCAL AND PLANNING DATA

Contract Price	88,185.00
Prior Expenditure	5,074.86
Expenditure this Quarter (September - November 1980)	9,317.21
Total Expenditure to Date	14,392.07
Amount Remaining	73,792.93
Total Hours Expended	4.59
Amount Next Quarter (estimate)	13,500.00
Amount Required to Complete Work	73,792.93